

# Assessment in TENCompetence: Sharing Assessment Process Information

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JISC CETIS Assessment SIG meeting  
Glasgow, UK, Sep. 26, 2007



# Overview

- TENCompetence Project
- A Standard-based and Service-oriented Approach to Support Assessment Process
- Assessment Process Specification (APS)
- Assessment Process Modelling Tool
- Conclusions and Future Work



**TENCompetence**

Building The European Network for Lifelong Competence Development

# TENCompetence Project

**TENCompetence** is a 4-year (Dec. 2005 - Nov. 2009) EU-funded Integrated IST-TEL project and fifteen partners are involved.

## **Project Aims:**

to build the European Network for Lifelong Competence Development

- How? By providing a technical and organizational Infrastructure
- Who for? For use by any individual, group or organization
- What for? To develop their competences

# TENCompetence Project

## Assessment in TENCompetence (WP6.B)

- Supporting assessment that is integrated with learning and instruction (which steps are to be carried out and by whom), e.g., formative & summative assessment
- Supporting new forms of assessment, which are process-based and are normally involved with multi-role/users, e.g., peer assessment, 360 degree feedback, and portfolio assessment

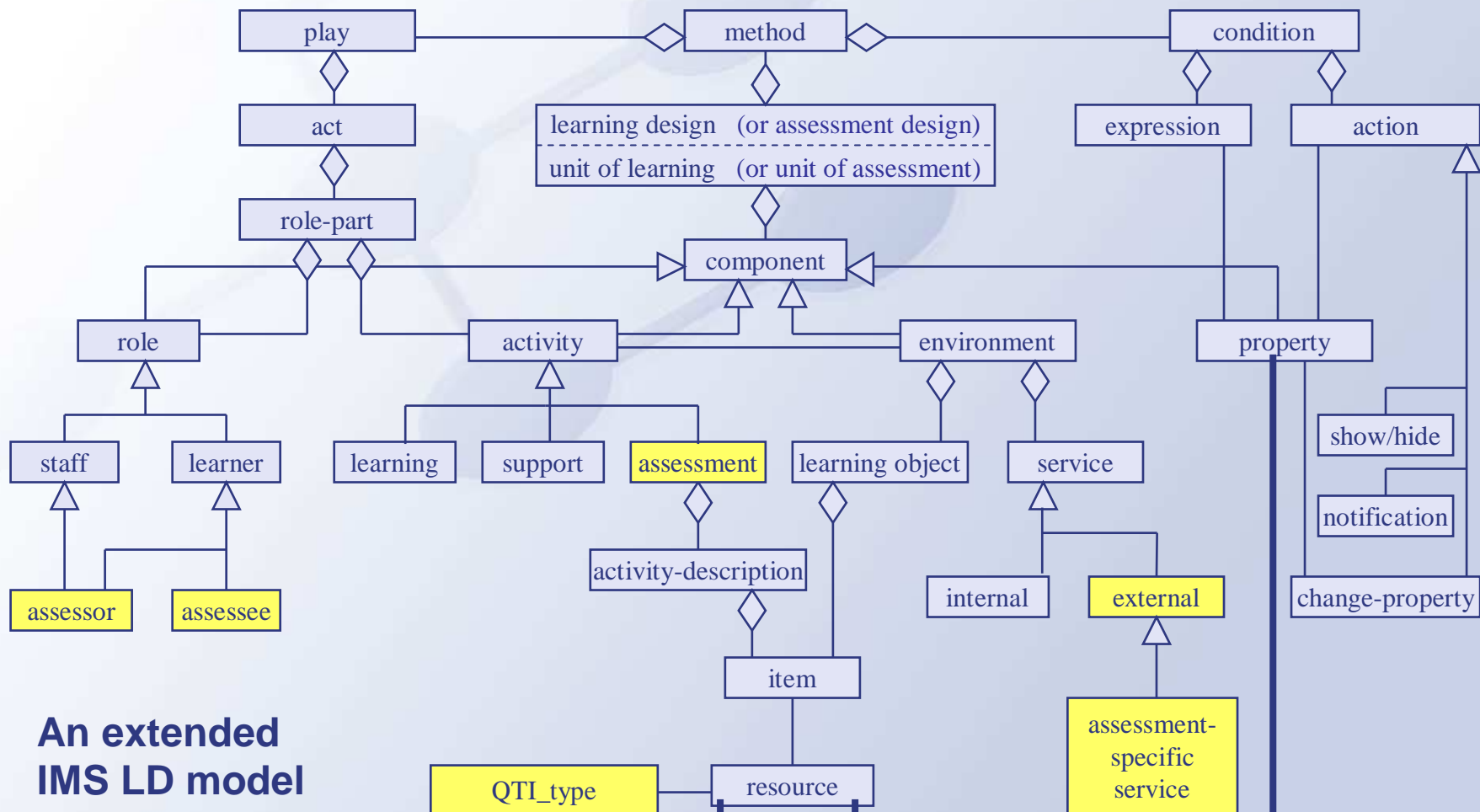
## Objectives of WP6.B

Develop a formal assessment specification and supporting tools that combines new assessment types and the ones included in the IMS QTI.

# A Standard-based and Service-oriented Approach to Support Assessment Process

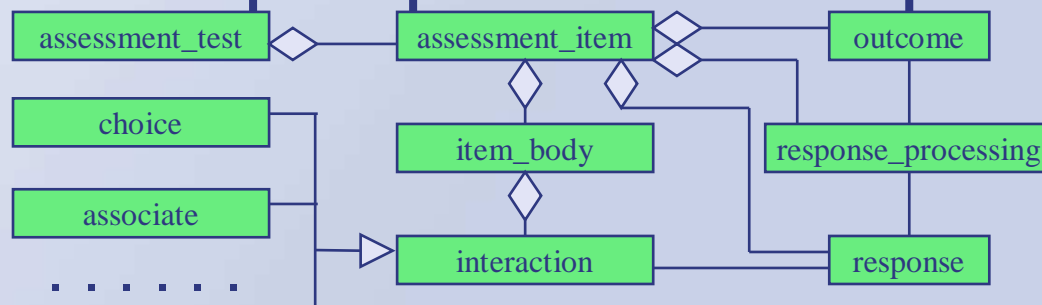
A combined use of IMS LD, IMS QTI, and assessment-specific services to model assessment processes

- Using IMS LD to model multi-role/user-involved assessment processes
- Using IMS QTI to model classical assessment tasks and using assessment-specific services to model special assessment tasks
- Using IMS LD to model a learn-flow with complicated process controls and decision rules
- Using IMS QTI, IMS LD, and assessment-specific services to model data-flow



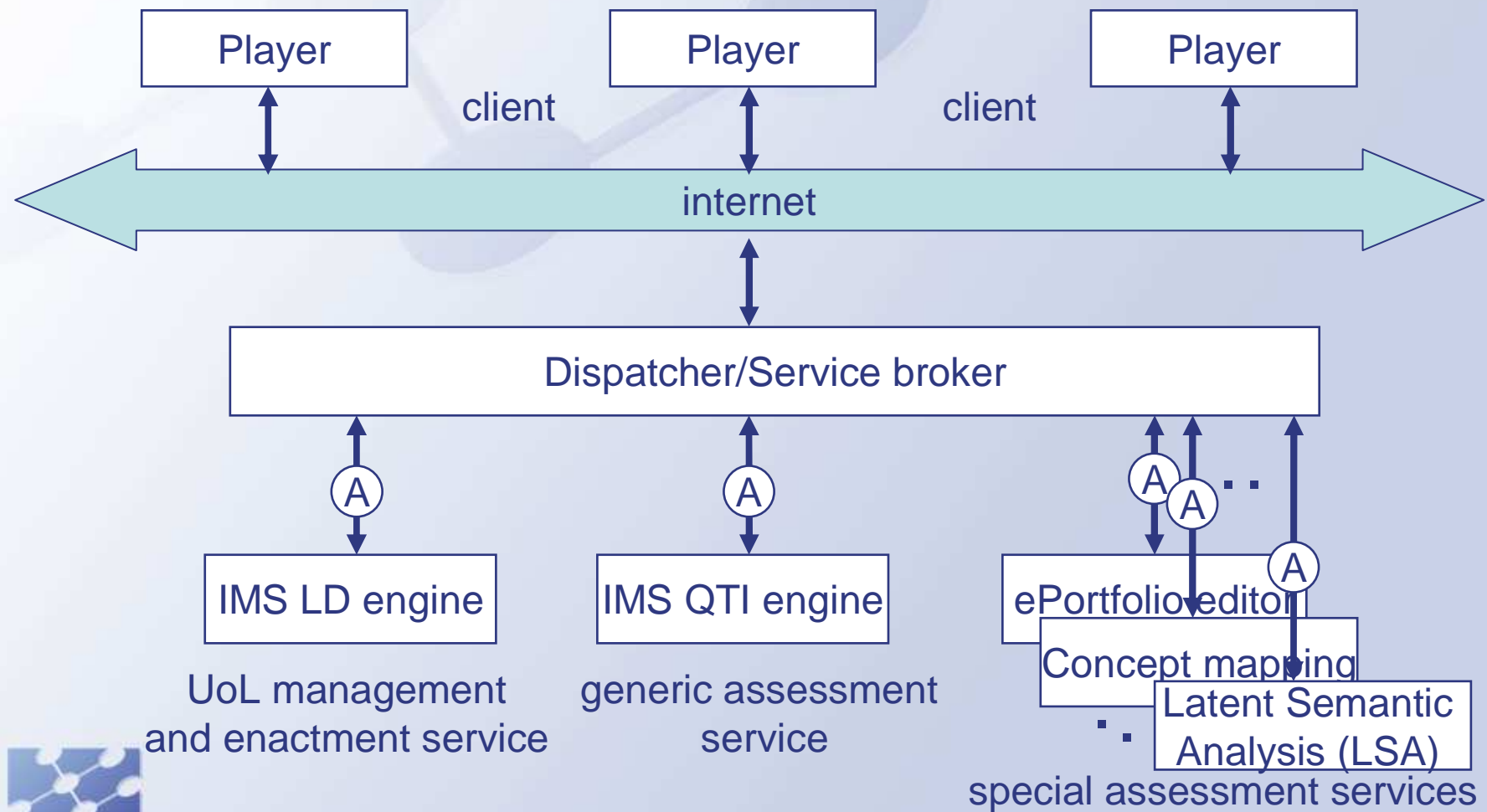
**An extended  
IMS LD model**

**A simplified  
IMS QTI model**

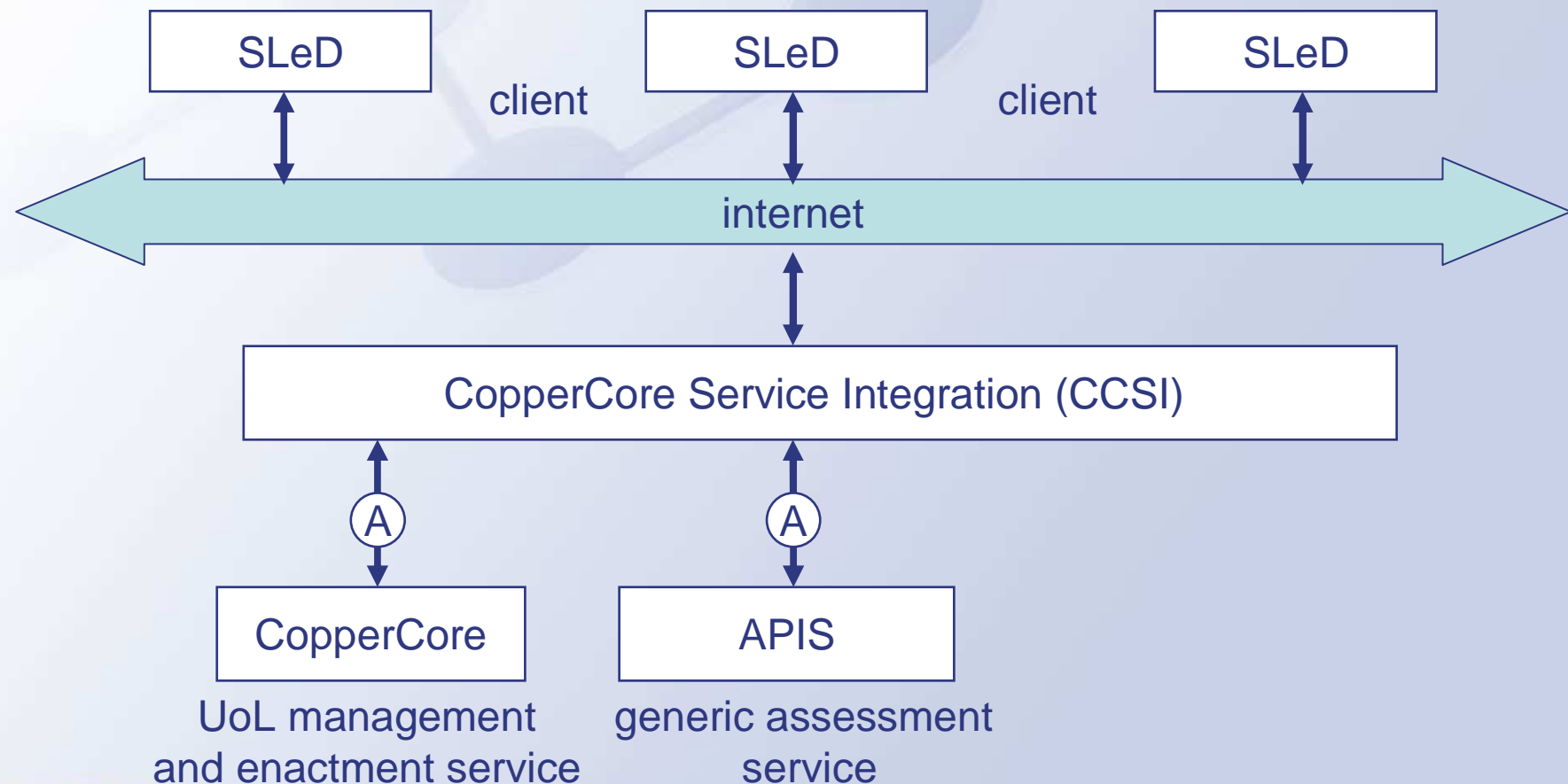


**TEN Competence**  
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# A Standard-based and Service-oriented Approach to Support Assessment Process

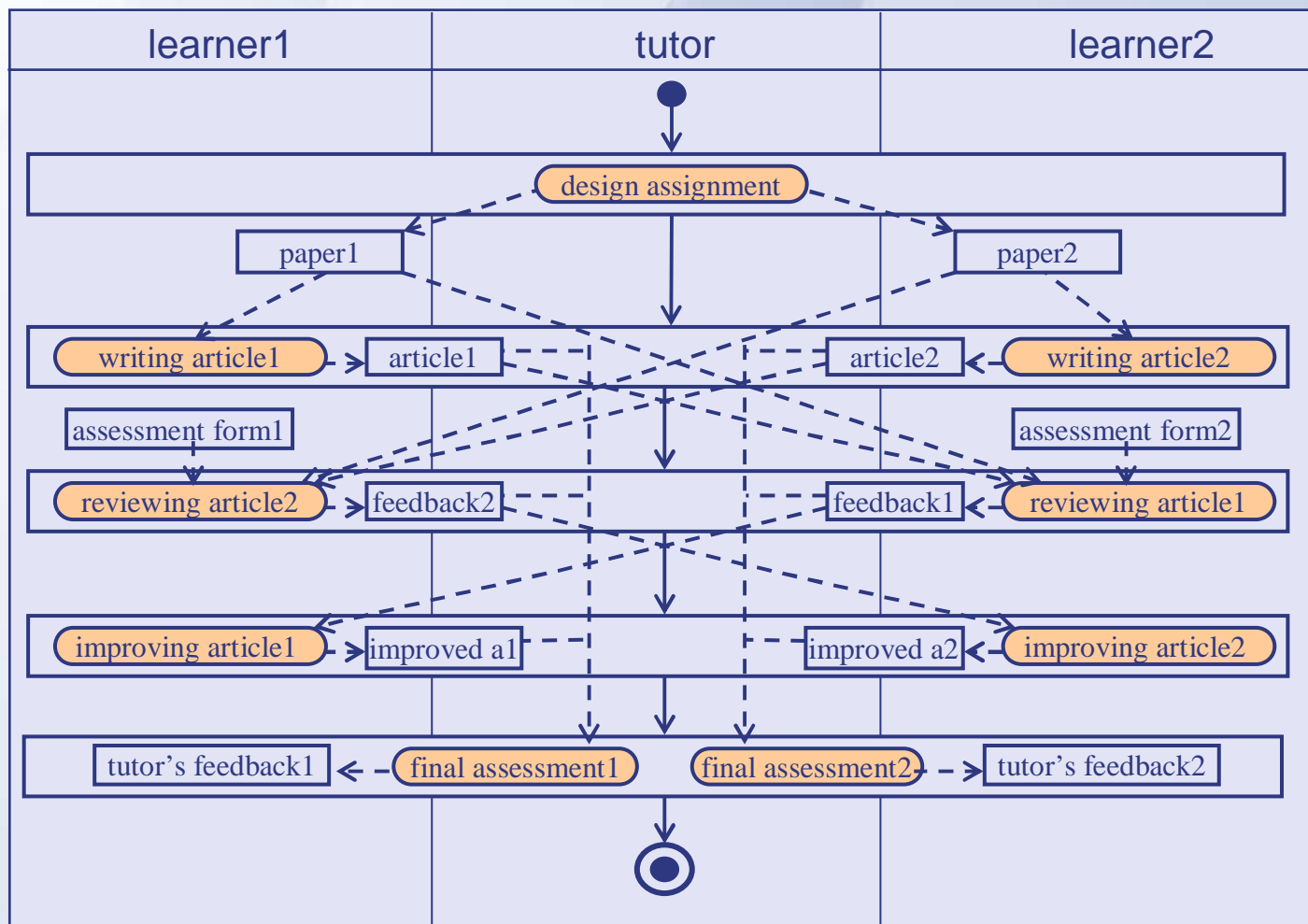


# A Standard-based and Service-oriented Approach to Support Assessment Process

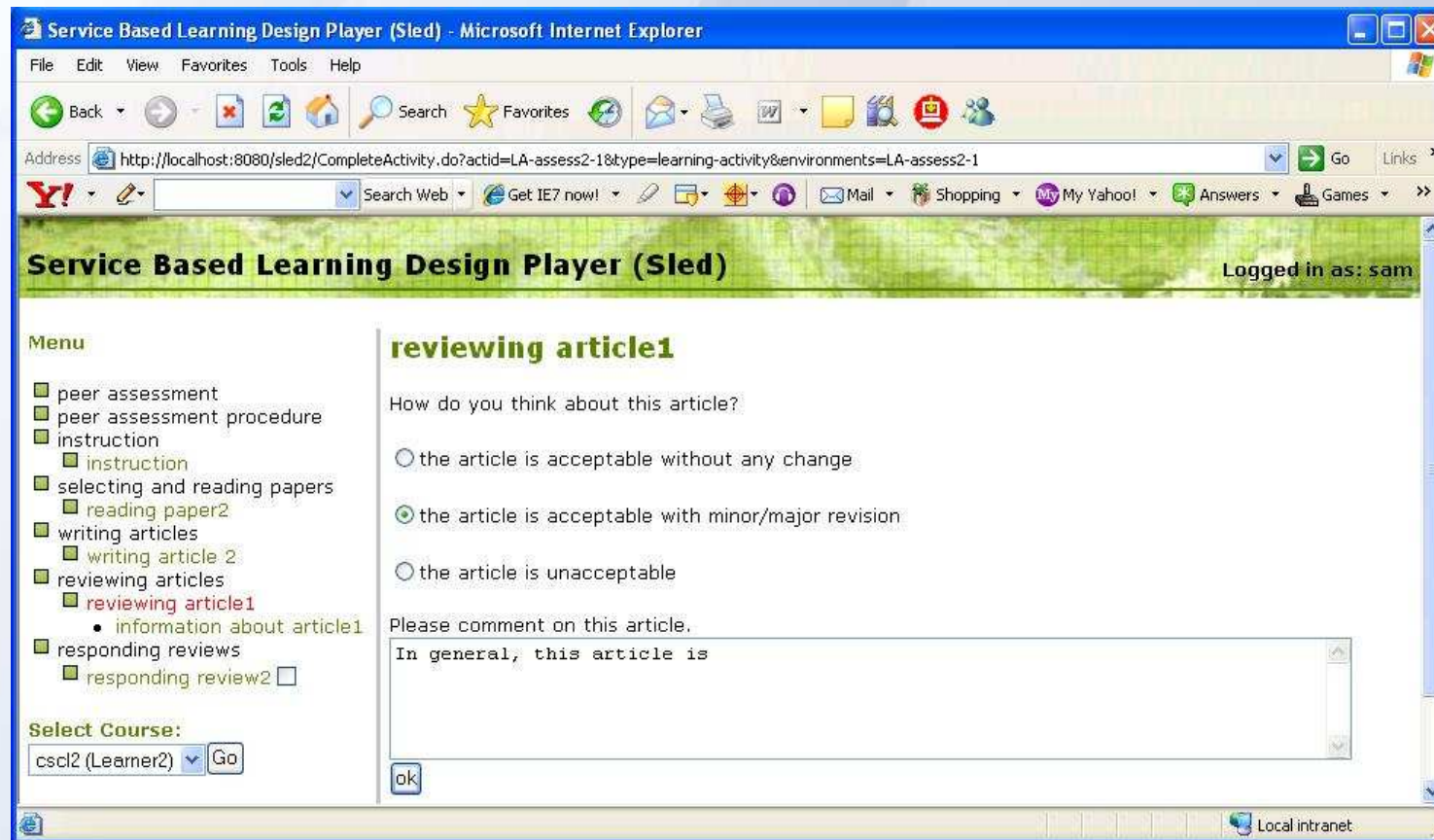




# A Standard-based and Service-oriented Approach to Support Assessment Process



# A Standard-based and Service-oriented Approach to Support Assessment Process



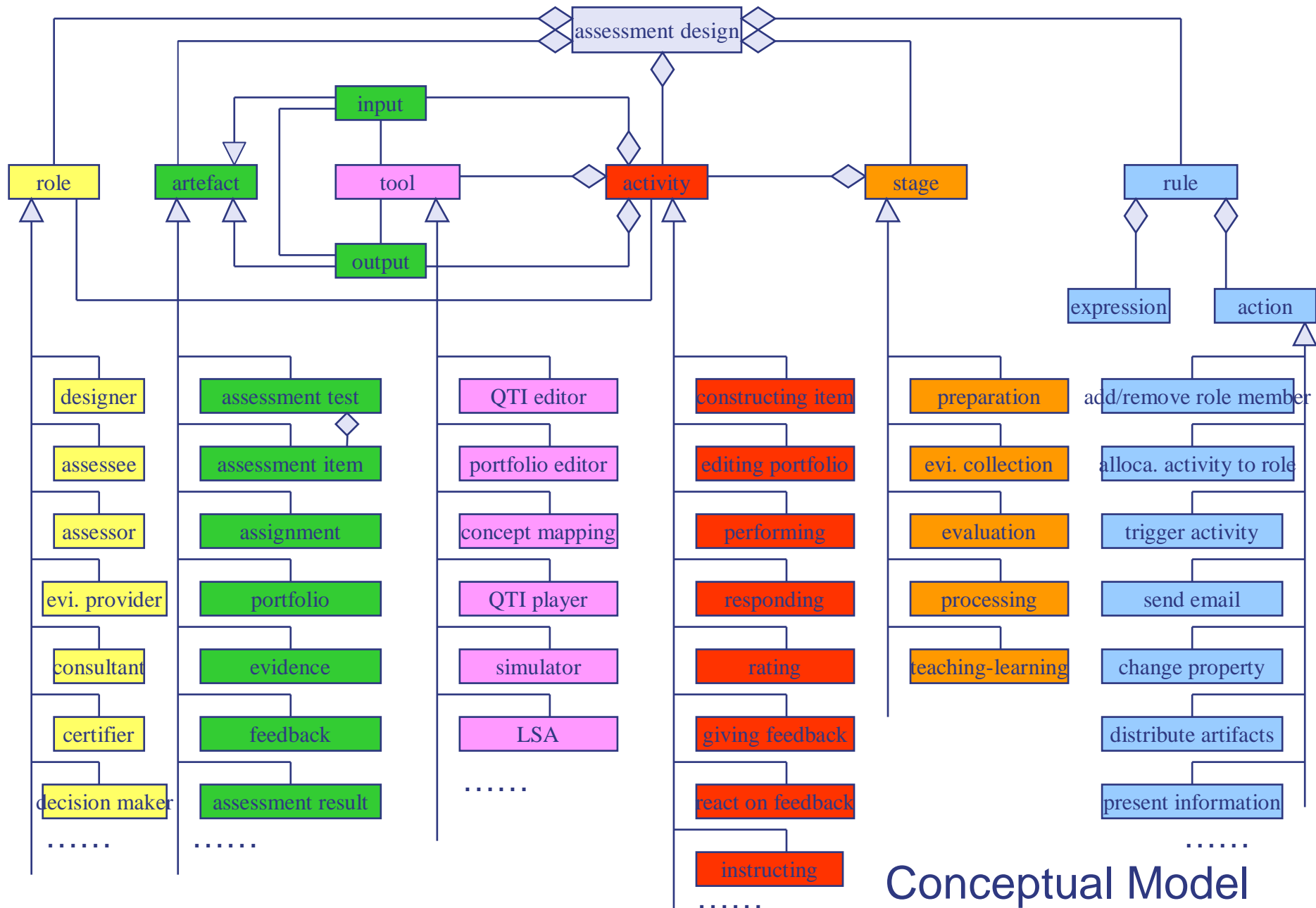
# Assessment Process Specification

## Problem:

It is too difficult for practitioners to specify an assessment process model by using IMS LD, IMS QTI, and assessment-specific services.

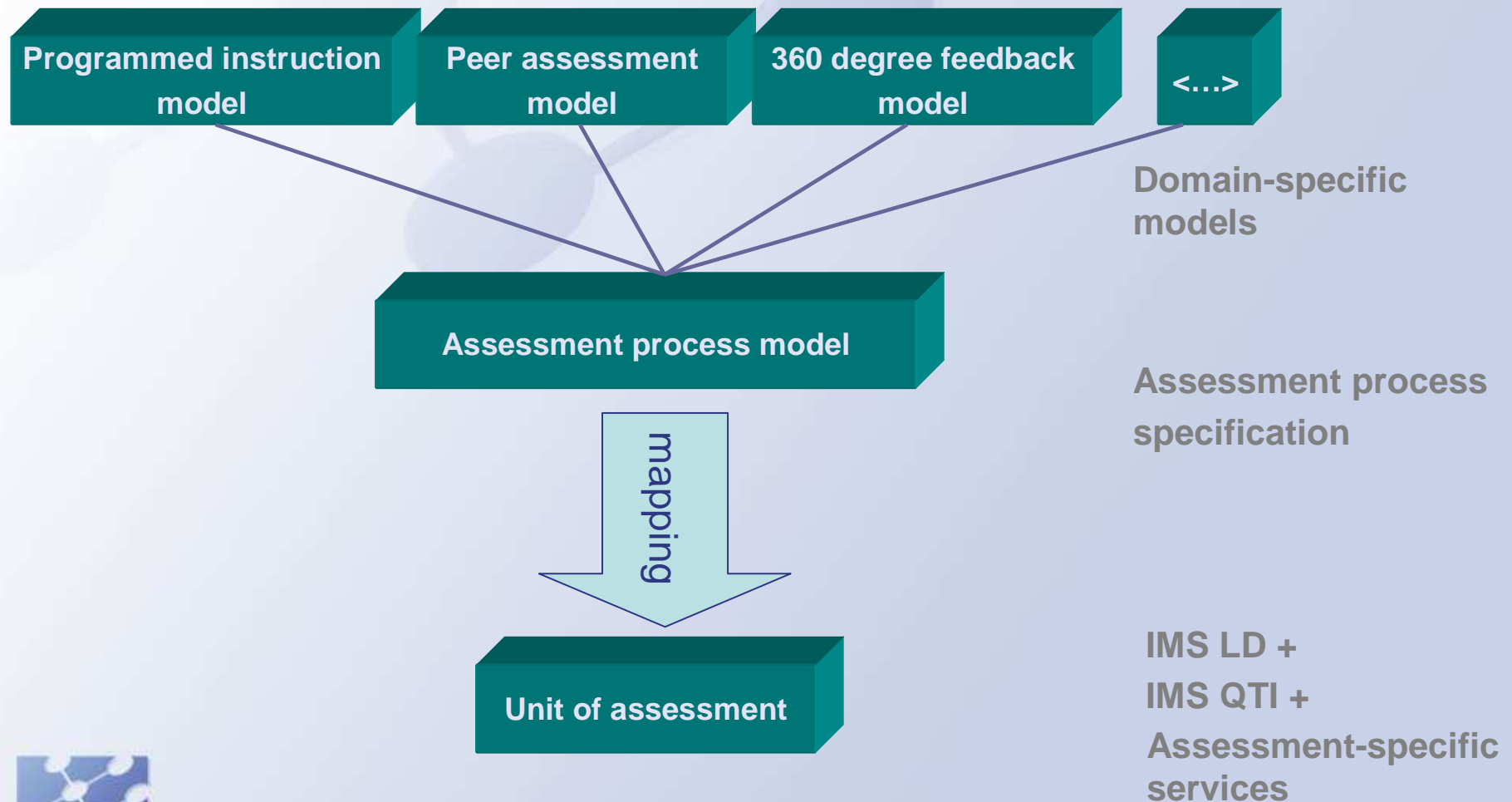
## Solution:

Developing an additional layer, *assessment process specification* (APS) used to describe assessment processes in an interoperable and abstract way. By using APS, every assessment practice can be represented in a design description (an abstract assessment plan), which captures underlying design ideas and principles. Thus, practitioners can share and exchange their assessment process models (assessment designs).



Conceptual Model

# Assessment Process Specification



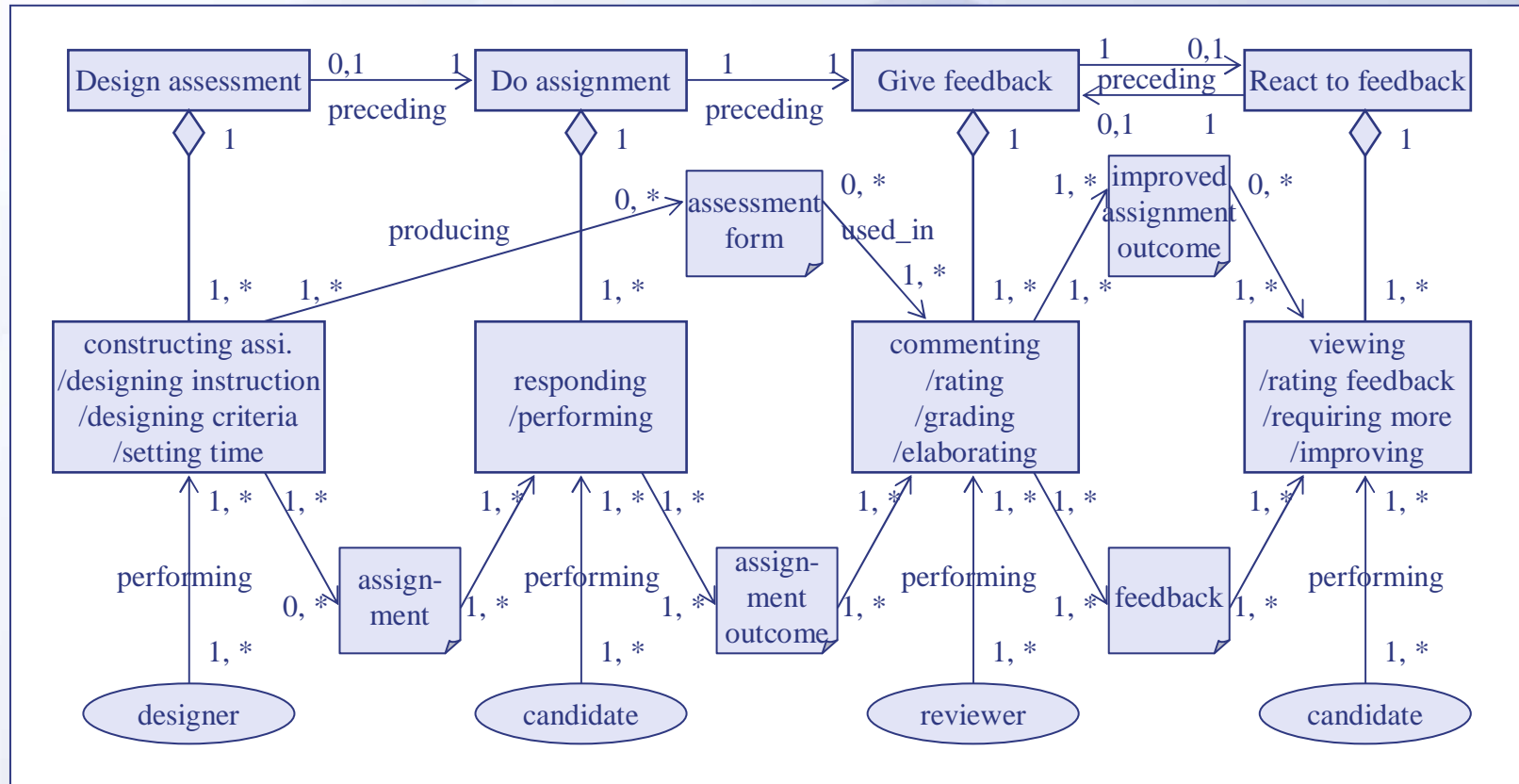
# Assessment Process Modeling Tool

## Aims:

- Enabling skilled users to define their own assessment process models by providing basic modeling facilities
- Enabling practitioners to understand, reuse, and customize pre-defined assessment process models by providing design guidance
- Transforming assessment process models into executable models represented in IMS LD + IMS QTI + assessment-specific services

The tool is still in design and will be implemented in the next year. The design and use of the tool will be explained by using a mock-up of the UI

# Assessment Process Modeling Tool

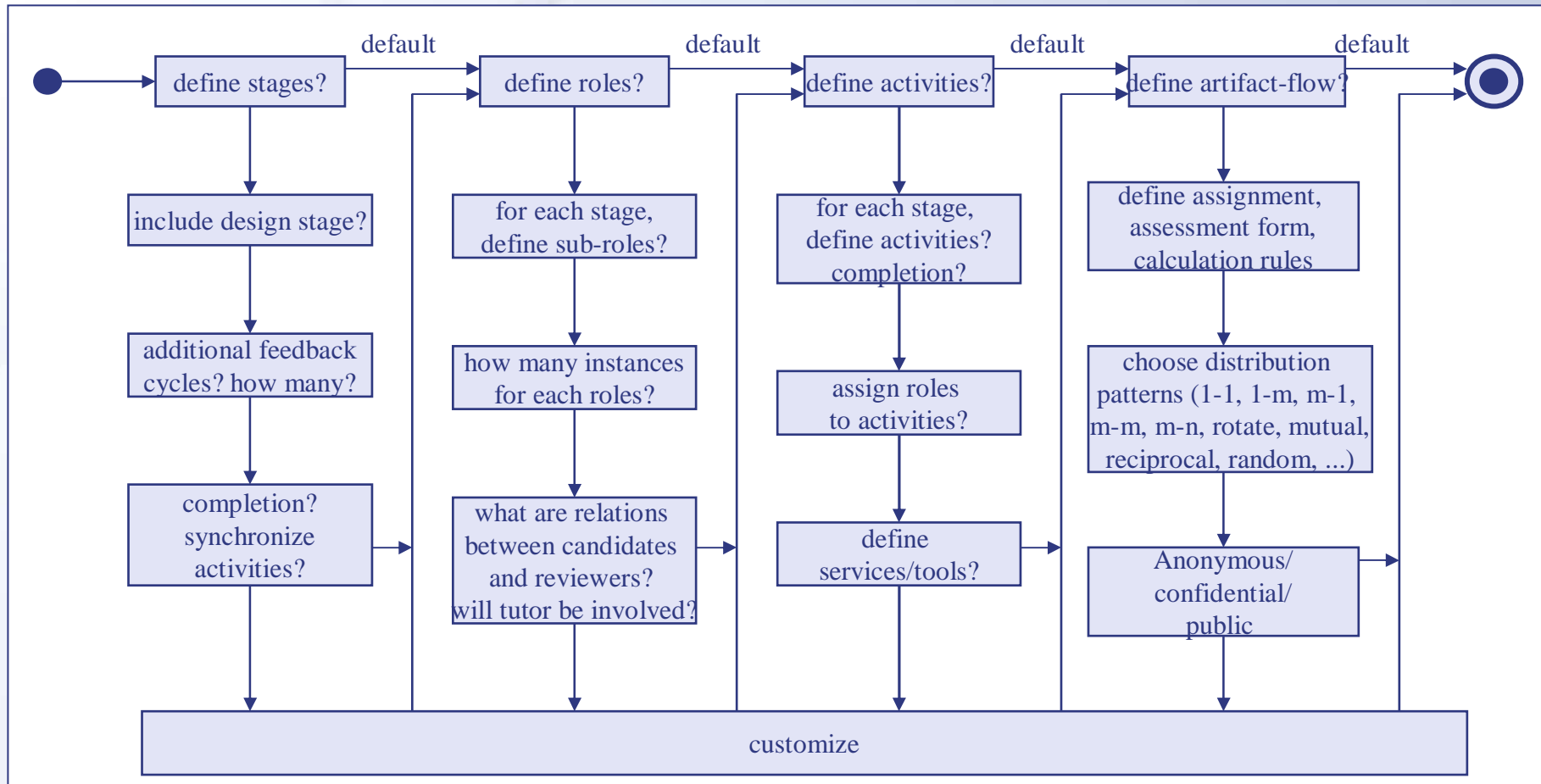


- Four kinds of stages in a peer assessment process
- In each stage, people with a certain role perform activities
- In each activity, there may be input and output artefacts





# Assessment Process Modeling Tool



- Guide to make design decisions by showing guidance and consequence
- Make design decisions by selecting default or pre-defined options
- Customize a process model (for skilled users)





# Peer assessment

File Edit View Tool Template Help



Here shows the guidance to make design decisions

user's decisions

role artifact service

stage lane

Specify role structure,  
artifacts, and services

Show and edit peer assessment model

State bar

## Peer assessment

File Edit View Tool Template Help



How many stages in the peer assessment process?

role

artifact service

stage

lane

Default (three stages)

With design assessment stage

With additional feedback stage

More complicated setting

Please make a decision



File

Edit

View

## Tool

# Template

Help



How many roles will be involved?

- Default (two persons)
- With the involvement of tutor
- More complicated setting

## More complicated setting

react to feedback	give feedback 2
-------------------	-----------------

artifact

service

stage

lane

do assignment

give feedback

react to feedback

give feedback 2

Five stages have been defined

## Peer assessment

File Edit View Tool Template Help



Would you like to define role structure?

role	artifact	service	stage	lane			
<div><div><div>R</div>designer</div><div><div>R</div>tutor</div><div><div>R</div>candidate</div><div><div>R</div>learner1</div><div><div>R</div>learner2</div><div><div>R</div>reviewer</div><div><div>R</div>learner1</div><div><div>R</div>learner2</div><div><div>R</div>tutor</div></div>			design assessment	do assignment	give feedback	react to feedback	give feedback 2

Default role setting and with the involvement of a tutor

## Peer assessment

File Edit View Tool Template Help



Would you like to define a typical activity for each stage?

Default setting

More complicated setting

role	artifact	service	stage	lane	
			design assessment	do assignment	give feedback
<b>R</b> designer					
<b>R</b> tutor					
<b>R</b> candidate					
<b>R</b> learner1					
<b>R</b> learner2					
<b>R</b> reviewer					
<b>R</b> learner1					
<b>R</b> learner2					
<b>R</b> tutor					




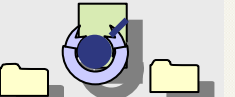



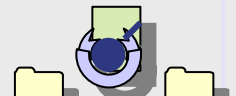

Please make a decision

## Peer assessment

File Edit View Tool Template Help



Would you like to define a typical activity for each stage?

role	artifact	service	stage	lane			
			design assessment	do assignment	give feedback	react to feedback	give feedback 2
<b>R</b> designer							
<b>R</b> tutor							
<b>R</b> candidate							
<b>R</b> learner1							
<b>R</b> learner2							
<b>R</b> reviewer							
<b>R</b> learner1							
<b>R</b> learner2							
<b>R</b> tutor							

Nine activities are defined and roles are assigned



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View

## Tool

# Template

Help



## Which stages will the tutor be involved?

## Give feedback 1

## Give feedback 2

## More complicated setting

role	artifact	service	stage	lane	
					Give feedback 2 More complicated setting
			design assessment	do assignment	give feedback
R	designer				
R	tutor				
R	candidate				
R	learner1				
R	learner2				
R	reviewer				
R	learner1				
R	learner2				
R	tutor				

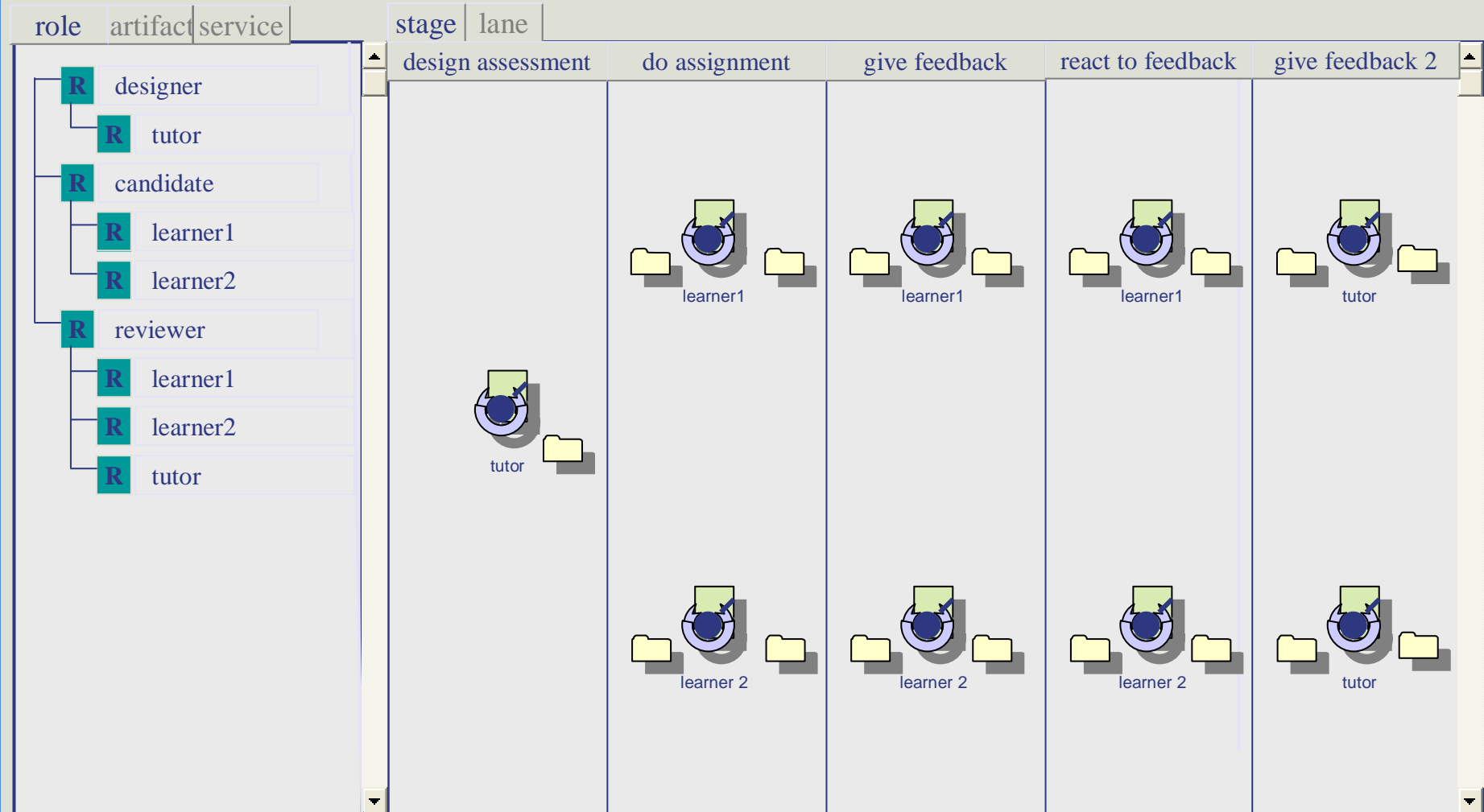
## Please make a decision

## Peer assessment

File Edit View Tool Template Help



Which stages will the tutor be involved?



The tutor is assigned to work in the stage of "give feedback 2"





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View

## Tool

# Template

## Help



Would you like to create artifacts ?

Default setting  
More complicated setting

artifact

service

stage

lane

design assessment

do assignment

give feedback

react to feedback

give feedback 2

**R** designer

R tutor

**R** candidate

**R** learner1

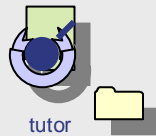
R learner2

**R** reviewer

**R** learner1

## R learner2

**R** tutor



tutor

learner 2




Diagram of learner 2: A blue circle with a green square on top, connected by a blue arrow. The green square is labeled 'learner 2'.

Please make a decision

## Peer assessment

File Edit View Tool Template Help



Would you like to create typical artifacts ?

role	artifact	service	stage	lane			
			design assessment	do assignment	give feedback	react to feedback	give feedback 2
A	assignment1						
A	assignment2						
A	outcome1						
A	outcome2						
A	feedback1.1						
A	feedback1.2						
A	improved outcome1						
A	improved outcome2						
A	feedback2.1						
A	feedback2.2						

artifacts are created

# Peer assessment

File Edit View Tool Template Help



Would you like to change the titles of artifacts?

finished

role	artifact	service	stage	lane			
			design assessment	do assignment	give feedback	react to feedback	give feedback 2
A	assignment1						
A	assignment2						
A	outcome1						
A	outcome2						
A	feedback1.1						
A	feedback1.2						
A	improved outcome1						
A	improved outcome2						
A	feedback2.1						
A	feedback2.2						

artifacts are created

## Peer assessment

File Edit View Tool Template Help



Would you like to change the titles of artifacts?

finished

role	artifact	service	stage	lane			
			design assessment	do assignment	give feedback	react to feedback	give feedback 2
A	paper1						
A	paper2						
A	article1						
A	article2						
A	feedback1						
A	feedback2						
A	improved article1						
A	improved article2						
A	tutor's feedback1						
A	tutor's feedback2						

The title of an artifact has been changed

# Peer assessment

File Edit View Tool Template Help



Would you like to define artifacts?

finished

role	artifact	service	stage	lane			
			design assessment	do assignment	give feedback	react to feedback	give feedback 2
	paper1						
	paper2						
	article1						
	article2						
	feedback1						
	feedback2						
	improved article1						
	improved article2						
	tutor's feedback1						
	tutor's feedback2						
	assessment form (QTI item)						

QTI assessment editor

assessment form

**Review Form**

☐ How do you think about this article?

☐ accept without modification

☐ accept with minor/major modification

☐ reject

☐ Comments:

An artifact has been created

## Peer assessment

File Edit View Tool Template Help



Would you like to define artifacts?

finished

role	artifact	service	stage	lane			
			design assessment	do assignment	give feedback	react to feedback	give feedback 2
A	paper1						
A	paper2						
A	article1						
A	article2						
A	feedback1						
A	feedback2						
A	improved article1						
A	improved article2						
A	tutor's feedback1						
A	tutor's feedback2						
A	assessment form						

An artifact has been defined

# Peer assessment

File Edit View Tool Template Help



How will the artifacts be distributed?

role	artifact	service	stage	lane		
			design assessment	do assignment	give feedback	Reciprocally Mutually Randomly Default setting
A	paper1					
A	paper2					
A	article1					
A	article2					
A	feedback1					
A	feedback2					
A	improved article1					
A	improved article2					
A	tutor's feedback1					
A	tutor's feedback2					
A	assessment form					

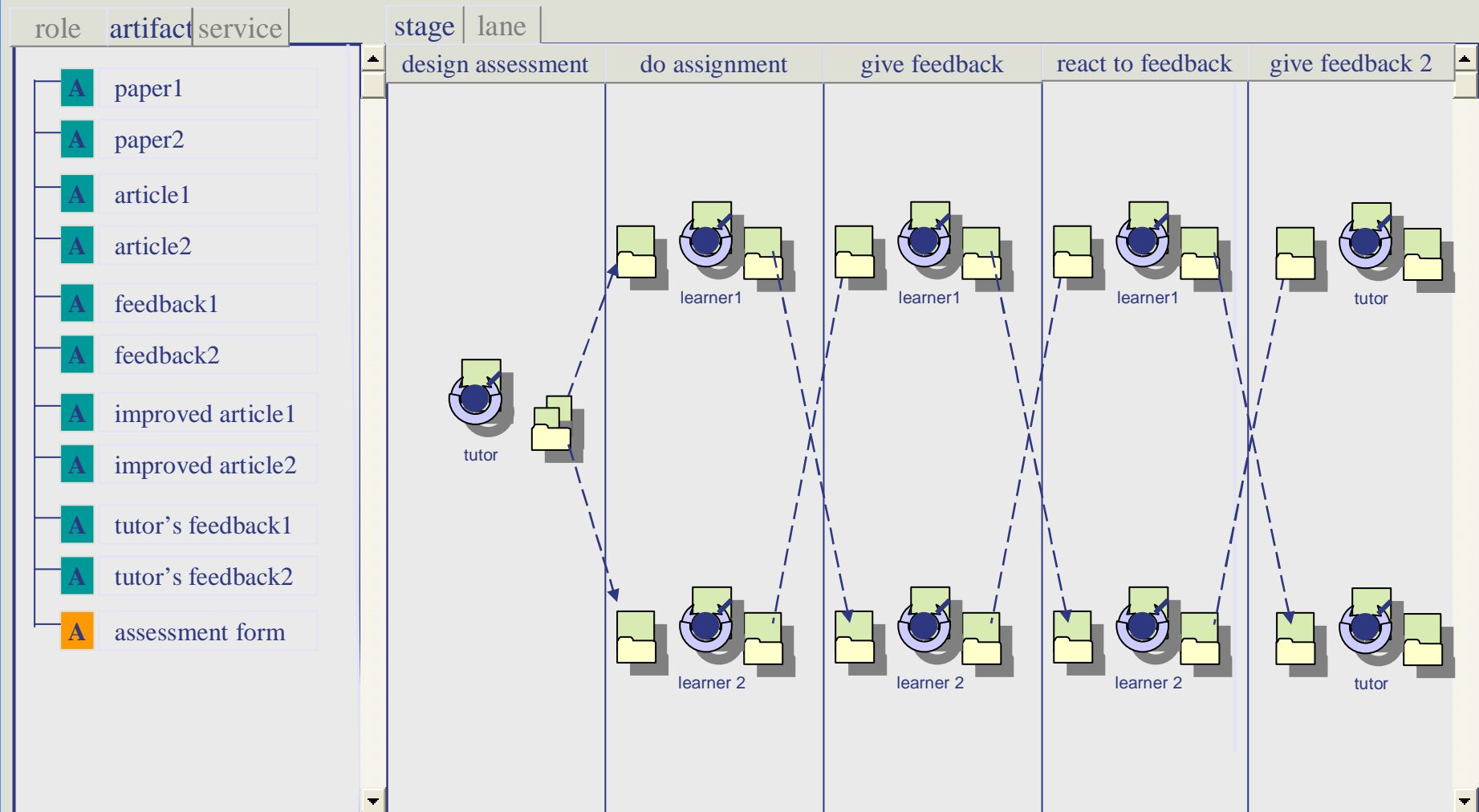
Please make a decision

## Peer assessment

File Edit View Tool Template Help



How will the artifacts be distributed?



An artifacts flow has been defined

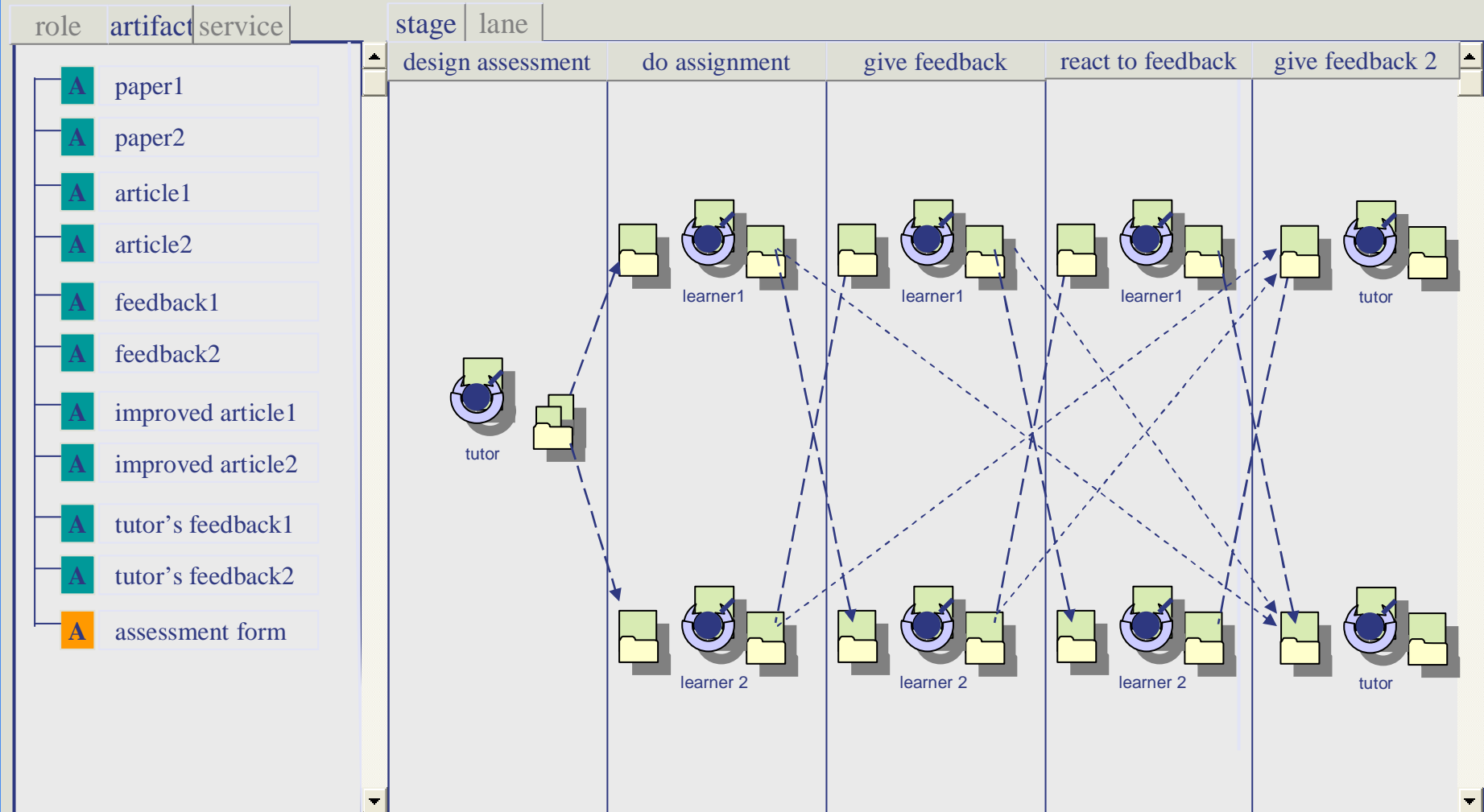


## Peer assessment

File Edit View Tool Template Help



How will the artifacts be distributed?



An artifact flow has been defined

# Conclusions and Future Work

## Conclusions:

- IMS LD, IMS QTI, and assessment-specific services can be used complementarily to support various assessment processes
- A higher level assessment process specification and corresponding supporting tools are expected to enable practitioners to share and exchange assessment process information

## Future work:

- Developing the assessment process modeling tool
- **Integrating QTI editor and other assessment services**
- Developing mapping algorithm to transform APS to IMS LD + IMS QTI + assessment-specific services.

# Thanks for your attention!

## Questions?

Contact information:

- Project website: [www.tencompetence.org](http://www.tencompetence.org)
- For details of associate partnerships:  
<http://www.tencompetence.org/node/16>
- Contact [c.kew@bolton.ac.uk](mailto:c.kew@bolton.ac.uk) for all other enquiries